

ABSTRACT

The simulator of the invention is based on a number of functional units connected directly or remotely to the central computer for controlling the operation and recording the shooting results. The weapon unit is untethered and includes a real hand gun equipped with a snap-on emitter unit to send simultaneously two beams of light upon pulling the trigger - a wide angle infrared beam and a narrowly focused and aimed at the target light beam. The infrared beam is registered by the sensor near the screen and a signal indicating a firing event is sent to the computer. The light beam, preferably from a laser source is sent towards the screen, reflected therefrom towards the optical block and travels through a number of fixed and rotating mirrors and through a light divider to the light sensor. That sensor when activated sends the HIT or MISS signal to the computer. Importantly, the optical travel path of the reflected from the screen light beam coincides with the travel path of the light beam generating the target of the screen. Controlled by the computer, rotation of the rotating mirrors both places the target at a specific area of the screen as well as allows accepting of the light beam from the screen by the light sensor. The target generator allows to position the target on the screen in any desirable area or to move it with constant or variable speed along a predetermined complex path on the screen. A video projector allows adding of the pre-recorded of virtual computer-generated surrounding scene onto the screen to increase the degree of realism of the shooting exercise.